AN IMPROVED METHOD FOR PREPARING EXUVIAE OF PARASITIC HYMENOPTERA[1]

David Wahl[2,3]

ABSTRACT: The practice of preparing exuviae of larval parasitic Hymenoptera with KOH is discouraged. An alternative involves: 1) soaking in water for 12-24 hours, 2) ultrasonification to remove debris and unfold the exuviae, and 3) clearing in Nesbitt's solution. These techniques give more control over preparation and mounting.

For parasitic Hymenoptera, study of larval stages is invaluable for identification and phylogenetic investigation. Investigators of these insects have used the techniques of Beirne (1941) for preparing and mounting the cast skins of the final-instar larvae. Briefly, Beirne's methods involve: 1) cutting open the parasitoid cocoon and removing the meconium and final-intar skin, 2) boiling the larval skin in 10% KOH, 3) rinsing the skin in distilled water, and 4) dehydrating and mounting in Canada balsam or a similar mounting medium. From personal experience with larval Ichneumonidae, these methods proved unsatisfactory and led to experiments with other techniques. The following steps are a combination of various practices from other areas of entomology. I believe they give more control over the preparation and mounting of larval skins.

Cleaning and preparation: The cocoon (or host pupa) from which the parasitoid has emerged is left for 12-24 hours in a vial of distilled water to which 1-2 drops of mild detergent have been added. It is then transferred to 70% ethanol, and carefully opened with microdissecting scissors. The meconium and final-instar skin, which are usually found at the end opposite the emergence hole, are removed to a vial of 70% ethanol and subjected to ultrasound for 1-2 minutes (A small ultrasonicator should be used to avoid potential disintegration of the specimen). This removes all debris from the larval skin and tends to unfold it from its tightly wadded condition. The skin is then returned to 70% ethanol and, under a binocular dissecting microscope, the head and its associated sclerites are removed. Extraneous fragments of cuticle are then teased away from the head. A deep concavity slide is filled with Nesbitt's solution, a clearing agent, and the larval head

[1]Received January 16, 1984. Accepted May 5, 1984.

[2]Department of Entomology, University of Kansas, Lawrence, Kansas 66045.

[3]Contribution number 1892 from the Department of Entomology, University of Kansas, Lawrence.

is immersed for 1-5 hours, depending upon the degree of sclerotization of the cephalic sclerites.

Mounting: The head is removed from the Nesbitt's solution and, along with the larval skin, mounted on a slide using Hoyer's medium. The slide is then dried for several days at 40-50° C and ringed with Glyptol®, an alkyd resin made by General Electric (or a similar ringing compound, e.g., Zut). I prefer Hoyer's for the superior refractive properties and the advantage of being able to mount directly from Nesbitt's into the medium. Some institutions may require that euparol or Canada balsam be used in place of Hoyer's; the larval remains may then be passed through a standard dehydration series and mounted accordingly.

LITERATURE CITED

Beirne, B. P. 1941. A consideration of the cephalic structures and spiracles of the final instar larvae of the Ichneumonidae (Hym.). *Trans. Soc. Br. Ent.* 7: 123-190.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

c/o BRITISH MUSEUM (NATURAL HISTORY), CROMWELL ROAD, LONDON, SW7 5BD

ITZN 11/5 A.N.(S.) 131 24 August 1984

The Commission hereby gives six months notice of the possible use of its plenary powers in the following cases, published in the *Bulletin of Zoological Nomenclature,* volume 41, part 3, on 23 August, 1984 and would welcome comments and advice on them from interested zoologists.

Correspondence should be addressed to the Secretary at the above address, if possible within six months of the date of publication of this notice.

Case No.

239 *Tibicina* Amyot, 1847 and *Lyristes* Horvath, 1926 (Insecta, Hemiptera, Homoptera): proposed conservation by the suppression of *Tibicen* Berthold, 1827. Also, Arguments pour la suppression du nom de genre *Tibicen* et de ses derives dans la nomenclature de la superfamille CICADOIDEA.

2142 *Hypocryphalus mangiferae* (Stebbing, 1914) (Insecta, Coleoptera proposed conservation under the plenary powers.

R.V. MELVILLE, Secretary